

REMARKS

35 U.S.C. §102 Rejection - Kalota

Applicant respectfully traverses the initial rejection of claims 14-15 and 18-20 under 35 U.S.C. § 102(b) by WO 98/08919 filed in the name of Kalota, et al. ("Kalota"). While the Examiner states that all of the limitations of claims 14-15 and 18-20 are disclosed in Kalota, Kalota is missing the limitation of claim 14 relative to the phosphate-metal layer creation on a metal substrate. Kalota teaches a metal working process and not a process to create a phosphate-metal layer or conversion surface on a metal substrate. Therefore, Kalota is missing at least one element of claim 14 and those claims that depend from 14, including claims 15, 18-20.

The Examiner notes that Kalota teaches a metal surface treatment process "that is the same as the claimed process" using the same processing solution, therefore the Examiner takes a position that the coating process of Kalota will form a phosphate metal layer on the metal surface as claimed while noting that the creation is not taught by Kalota. (Office Action, pg. 3-4). Applicant acknowledges the Examiner's position that Kalota does not teach a process for creation of a phosphate metal layer. Applicant acknowledges Examiner's position that there are certain similarities among compositional elements in each process, but the composition are not the same nor is the process the same so it would not be a reasonable position to conclude that phosphate metal layer required in claim 14 would be deposited in the cutting and grinding process of metal working in Kalota. Quite the contrary, metal working takes metal away from a metal substrate and disrupts the surface rather than creating a new surface. Furthermore, the quantities of, for example, phosphoric acid desirable to remove heat while metal working have no relation to and may be significantly different than the amount necessary to create the phosphate-metal layer of the current invention – a disparate process.

In conclusion, Kalota does not teach a process for creation of a phosphate metal layer but teaches heat dissipation and lubrication for metal working. No layer is created. While there are some similarities in composition, compositions and concentrations appear to differ in keeping with the differing processes. Kalota is most concerned with metal working and providing a non-oil based lubricating fluid useful in cutting, grinding, shaping and other metal working operations. (See

Abstract) The purpose is for removal of heat from the work piece and tool, reduction of friction among chips, tool and work piece, removal of metal debris produced by the work. (Page 1, ll.13-18). The purpose is not to create a "phosphate-metal layer" as required in claim 14, nor would one be created during a cutting or grinding process, regardless of the composition.

The Examiner argues that Kalota teaches a coating process. A coating process includes the deposition of a coating on top of a piece of metal, not the creation of a conversion surface. However, neither a coating process nor a conversion surface process is supported by the teaching of Kalota, which destroys surfaces. In contrast, the current invention is directed to the creation of a chemiabsorbed "phosphate-metal layer" as indicated in claim 14. This is typically referred to as a conversion surface and is distinctly different from a coating.

35 U.S.C. §102 Rejection – Japan '297

Claims 14 and 18-20 are also initially rejected as allegedly being anticipated by JP 62-190297 ("JP '297"). The Examiner states that all of the limitations of claims 14 and 18-20 are disclosed in JP '297. However, JP '297 is similar to Kalota in that it teaches a water-soluble lubricating compound used for cutting. This is a disparate art. One of ordinary skill in the art of creating a conversion surface would not look to the cutting art. Cutting metal creates the exact opposite effect in that cutting tears surfaces and does not convert to a new surface of changed composition. JP '297 indicates that the processes include cutting, polishing or plastic working of metals, plastics, ceramics or glass. If applied to metal, these processes would make it impossible to create a conversion layer as they destroy surfaces. Thus, JP 297 does not meet the claim limitation of a process for creating a phosphate-metal layer.

Furthermore, JP 297 identifies a polyhydric alcohol as "an essential component". (Abstract) This component does not exist in the claims of the current invention. While it is not expressly excluded from the current claims, the identification of the component as "essential" to JP 297 distinguishes the current invention. Essential components must form part of the claim. As polyhydric alcohol is not part of claim 14, it cannot be anticipated by JP 297 that teaches polyhydric alcohol is essential.

In that claims 18-20 depend from claim 14, they are distinguishable on similar grounds.

35 U.S.C. §103 Rejection – Kalota combined with Otaki

Claims 16-17 are rejected as allegedly being obvious under 35 U.S.C. § 103(a) by Kalota in view of U.S. Patent No. 4,765,917 filed in the name of Otaki et al. ("Otaki"). The Examiner alleges that Kalota discloses all of the limitations of claims 16-17 except the addition of ammonium acetate. Applicant respectfully traverses this argument as noted above in that Kalota teaches a disparate art and is missing additional elements. Furthermore, Kalota teaches away from the creation of a conversion surface.

Regarding the additional element of NH₄C₂H₃O₂ found in claim 16, the Examiner indicates that Otaki teaches a water-base metal forming lubricant comprising additives such as organic phosphates and the addition of ammonium acetate as a performance enhancer in the water based lubricant. Like Kalota, Otaki is in a disparate area of art. Otaki related to metal forming operations where temperatures are elevated, called hot forging. One of ordinary skill in the art of conversion surfaces would not look to the art of hot forging. Compositions in hot forging are not designed to build or modify surfaces but are designed to take away heat and to wet the metal, as well as reduce press load. (See generally Background of the Invention, Otaki). In fact, Otaki teaches the use of a phosphate compound for extreme pressure properties, not for the purpose of building a conversion surface. (Column 2, l. 30). Additionally, ammonium acetate is included as a performance enhancer for the purpose of film formation, insulation, increased temperature resistance and surface wetting or cooling, not for creation of a conversion surface. One of ordinary skill in the art would not look to Otaki for a teaching regarding conversion surfaces nor would the combination of Otaki and Kalota provide the invention as claimed as elements would still be missing from the combination. In summary, Otaki teaches an entirely different and disparate process from the current claimed invention. The combination of Kalota and Otaki is missing elements, particularly the formation of the phosphate-metal layer.

Claim 17 incorporates the distinguishing characteristics of claim 16 and is distinguishable on the same grounds.

35 U.S.C. §103 Rejection – Japan '297 combined with Kalota

The Examiner discusses combining JP 297 with Kalota relative to claim 15. As acknowledged by the Examiner, JP 297 does not teach the presence of [NR4]xHPO₄ in a composition. As noted above, both Kalota and JP 297 are in disparate arts and not the art of surface building. They teach metal working including grinding and cutting. They do not individually nor together teach the process of creating a phosphate-metal layer on a metal substrate using the phosphorus-containing solution of claim 15.

35 U.S.C. §103 Rejection – Japan '297 combined with Kalota and Otaki

The Examiner discussed combining JP 297 with Kalota and with Otaki relative to claim 16 and 17. Kalota and JP 297 teach the art of cutting and grinding, while Otaki teaches the art of metal hot forming. Thus, the prior art cited is in two areas of art, each disparate from the current invention that creates a conversion surface by forming a phosphate metal layer as required by the claim. Claim 16 further requires the addition of NH₄ C₂H₃O₂. This ammonium acetate is included in Otaki as a performance enhancer for the purpose of film formation, insulation, increased temperature resistance and surface wetting or cooling, not for creation of a conversion surface. One of ordinary skill in the art of conversion surfaces would not extract one chemical from hot forming to add to another selected chemical used for heat removal in a cutting process to create a composition for making a conversion surface.

Finally, the Examiner provisionally rejected claims 14-20 on the ground of nonstatutory obviousness-type double patenting because the claims are allegedly not patentably distinct from claims 1 and 4-9 of co-pending Application Serial No. 11/507,851. Office Action, pages 8-9. Applicant respectfully traverses this rejection.

Claim 1 of the co-pending '851 application is a different process:

A process for enhancement of flow of a target fluid in a fluid system comprising adding an effective amount of a flow enhancement composition to the target fluid for circulation in the fluid system, the fluid enhancement composition comprising a mixture of salts and a target fluid,

the salts comprising $[Y]_xH_2PO_4$ and $[Y]_{x+1}HPO_4$, where $[Y]$ is a cation and x is an integer, such that the target fluid with the salts is operable to create enhanced flow or enhanced transfer rate in the target fluid.

While the elements of the composition applied to the process to enhance flow contain phosphorus composition, the claim is directed to a process for enhancement of flow in pipes and tubes. Applicant respectfully submits that, while related, this is distinct from the use of the phosphorus-containing solution for creating a phosphate-metal layer on a metal substrate.

In commenting upon the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the references and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims. Not all of the distinctions between the prior art and Applicant's present invention have been made by Applicant. For the foregoing reasons, Applicant reserves the right to submit additional evidence showing the distinctions between Applicant's invention to be unobvious in view of the prior art.

The foregoing remarks are intended to assist the Examiner in re-examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered to be exhaustive of the facets of the invention, which render it patentable, being only examples of certain advantageous features and differences that Applicant's attorney chooses to mention at this time.

Reconsideration of the application and allowance of all of the claims in prosecution are respectfully requested. In view of the foregoing Response, Applicant respectfully submits that all of the claims are allowable, and Applicant respectfully requests the issuance of a Notice of Allowance. Should further discussion regarding the application be desired by the Examiner, a telephone conference is respectfully requested. I can be reached at (713) 221-3306.

A Request for Three-Month Extension of Time is included and a check in the amount of \$510. The Commissioner is authorized to charge BRACEWELL & GIULIANI LLP, Deposit Account 50-0259 (27435.002) for any *additional* fee(s) that may be required.

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Respectfully submitted,



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